



DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2021-1069; Project Identifier AD-2021-00308-E; Amendment 39-21862; AD 2021-26-04]

RIN 2120-AA64

Airworthiness Directives; Engine Alliance Turbofan Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule; request for comments.

SUMMARY: The FAA is superseding Airworthiness Directive (AD) 2019-18-08 which applied to all Engine Alliance (EA) GP7270 and GP7277 model turbofan engines. AD 2019-18-08 required a visual inspection of the engine fan hub assembly, initial and repetitive eddy current inspections (ECIs) of the engine fan hub blade slot bottom and blade slot front edge for cracks, and replacement of the engine fan hub blade lock assembly for certain affected engines. This AD continues to require initial and repetitive ECIs and adds an ultrasonic test (UT) inspection. This AD also lowers the repetitive ECI threshold, and requires an independent inspection of the engine fan hub assembly at the next disassembly and the next reassembly of the engine fan hub blade lock assembly and a visual inspection of the engine fan hub assembly for damage. This AD also requires replacement of the engine fan hub assembly with a part eligible for installation if damage is found outside serviceable limits. This AD was prompted by an uncontained failure of the engine fan hub. The FAA is issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective [INSERT DATE 15 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD as of [INSERT DATE 15 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The FAA must receive any comments on this AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to <https://www.regulations.gov>. Follow the instructions for submitting comments.
- Fax: (202) 493-2251.
- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.
- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this final rule, contact Engine Alliance, 411 Silver Lane, East Hartford, CT 06118; phone: (800) 565-0140; email: help24@pw.utc.com; website: www.engineallianceportal.com. You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 1200 District Avenue, Burlington, MA 01803. For information on the availability of this material at the FAA, call (817) 222-5110. It is also available at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2021-1069.

Examining the AD Docket

You may examine the AD docket at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2021-1069; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this final rule, any comments received, and other information. The street address for Docket Operations is listed above.

FOR FURTHER INFORMATION CONTACT: Stephen Elwin, Aviation Safety Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: (781) 238-7236; fax: (781) 238-7199; email: Stephen.L.Elwin@faa.gov.

SUPPLEMENTARY INFORMATION:

Background

The FAA issued AD 2019-18-08, Amendment 39-19735 (84 FR 49944, September 24, 2019), (AD 2019-18-08), for all EA GP7270 and GP7277 model turbofan engines. AD 2019-18-08 required, for certain GP7270 and GP7277 model turbofan engines, an initial and repetitive ECI of the engine fan hub blade slot bottom and blade slot front edge for cracks. For all GP7270 and GP7277 model turbofan engines, AD 2019-18-08 also required an independent inspection of the engine fan hub assembly prior to the reassembly of the engine fan hub blade lock assembly and a visual inspection of the engine fan hub assembly for damage. For certain serial numbered GP7270 and GP7277 model turbofan engines, AD 2019-18-08 required replacement of the engine fan hub blade lock assembly with a part eligible for installation. AD 2019-18-08 resulted from the manufacturer identifying a fatigue crack originating inboard of a blade slot after the manufacturer performed a metallurgical examination of the engine fan hub that was recovered, related to an uncontained engine hub failure that occurred on September 30, 2017. After performing a risk assessment, the manufacturer determined the need to reduce the compliance time for the initial ECI and add a repetitive ECI. The FAA issued AD 2019-18-08 to detect defects, damage, and cracks that could result in an uncontained failure of the engine fan hub assembly.

Actions Since AD 2019-18-08 was Issued

Since the FAA issued AD 2019-18-08, EA has revised its Alert Service Bulletin, reducing the repetitive ECI interval from 330 cycles to 290 cycles, and adding an inner diameter UT inspection of the rim area for cracks. EA published EA Turbojet Engine Alert Service Bulletin (ASB) No. EAGP7-A72-389, Revision No. 7, dated October 8, 2021, to update the repetitive inspection interval for performing the ECIs and add UT inspections. The FAA is issuing this AD to address the unsafe condition on these

products.

FAA's Determination

The FAA is issuing this AD because the agency determined the unsafe condition described previously is likely to exist or develop in other products of the same type design.

Related Service Information under 1 CFR Part 51

The FAA reviewed EA Turbojet Engine ASB No. EAGP7-A72-389, Revision No. 7, dated October 8, 2021. This ASB describes procedures for performing an ECI of the engine fan hub blade slot bottom and blade slot front edge, and performing a UT inspection of the fan hub rim area for engine fan hub assemblies at the LPC module assembly level, at the piece part level, and installed in an engine (on-wing or off-wing). This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in ADDRESSES.

Other Related Service Information

The FAA reviewed EA Turbojet Engine ASB No. EAGP7-A72-418, Revision No. 1, dated January 11, 2019. This ASB provides guidance on replacement or modification of the engine fan hub blade lock assembly.

The FAA also reviewed the following service information:

Subtask 72-31-42-210-001-A, of Task 72-31-42-000-802-A, from the A380 Aircraft Maintenance Manual (AMM). This subtask describes procedures for performing an on-wing visual inspection after removal of the engine fan hub blade lock assembly.

Figure 405 of Task 72-00-31-420-004 of the EA GP7000 Series Engine Manual (EM). This figure and task describe procedures for performing a visual inspection after removal of the engine fan hub blade lock assembly when the engine is in the shop.

Subtask 72-00-00-210-012-A, of Task 72-00-00-210-806-A, from the A380 AMM. This subtask describes procedures for performing an on-wing visual inspection after reassembly of the engine fan hub blade lock assembly.

Task 72-00-31-420-004, Paragraph 1.E.(13), of the EA GP7000 Series EM. This task describes procedures for performing a visual inspection after reassembly of the engine fan hub blade lock assembly when the engine is in the shop.

Table 601 in Subtask 72-00-00-210-012-A of Task 72-00-00-210-806, from the A380 AMM, and Task 72-00-31-220-010 of the EA GP7000 Series EM. Table 601 and Task 72-00-31-220-010 describe acceptable damage service limits for the engine fan hub assembly.

AD Requirements

This AD requires, for GP7270 and GP7277 model turbofan engines with engine fan hub assembly part numbers (P/Ns) 5760221, 5760321, or 5760001, initial and repetitive ECI of the engine fan hub blade slot bottom and blade slot front edge for cracks. Additionally, this AD lowers the repetitive ECI threshold, in conjunction with the added repetitive UT inspection threshold. This AD also requires initial and repetitive UT inspections of the fan hub rim area. This AD also requires an independent inspection of the engine fan hub assembly at the next disassembly and the next reassembly of the engine fan hub blade lock assembly and a visual inspection of the engine fan hub assembly for damage. This AD also requires replacement of the engine fan hub assembly with a part eligible for installation if damage is found outside serviceable limits.

For certain serial-numbered GP7270 and GP7277 model turbofan engines, this AD requires replacement of the engine fan hub blade lock assembly with a part eligible for installation.

Interim Action

The FAA considers this AD to be an interim action. If final action is later identified, the FAA might consider further rulemaking.

Justification for Immediate Adoption and Determination of the Effective Date

Section 553(b)(3)(B) of the Administrative Procedure Act (APA) (5 U.S.C. 551 *et seq.*) authorizes agencies to dispense with notice and comment procedures for rules when the agency, for “good cause,” finds that those procedures are “impracticable, unnecessary, or contrary to the public interest.” Under this section, an agency, upon finding good cause, may issue a final rule without providing notice and seeking comment

prior to issuance. Further, section 553(d) of the APA authorizes agencies to make rules effective in less than thirty days, upon a finding of good cause.

The FAA has found the risk to the flying public justifies waiving notice and comment prior to adoption of this rule because no domestic operators use this product. It is unlikely that the FAA will receive any adverse comments or useful information about this AD from any U.S. operator. Accordingly, notice and opportunity for prior public comment are unnecessary, pursuant to 5 U.S.C. 553(b)(3)(B). In addition, for the foregoing reason(s), the FAA finds that good cause exists pursuant to 5 U.S.C. 553(d) for making this amendment effective in less than 30 days.

Comments Invited

The FAA invites you to send any written data, views, or arguments about this final rule. Send your comments to an address listed under ADDRESSES. Include “Docket No. FAA-2021-1069 and Project Identifier AD-2021-00308-E” at the beginning of your comments. The most helpful comments reference a specific portion of the proposal, explain the reason for any recommended change, and include supporting data. The FAA will consider all comments received by the closing date and may amend this final rule because of those comments.

Except for Confidential Business Information (CBI) as described in the following paragraph, and other information as described in 14 CFR 11.35, the FAA will post all comments received, without change, to <https://www.regulations.gov>, including any personal information you provide. The agency will also post a report summarizing each substantive verbal contact received about this final rule.

Confidential Business Information

CBI is commercial or financial information that is both customarily and actually treated as private by its owner. Under the Freedom of Information Act (FOIA) (5 U.S.C. 552), CBI is exempt from public disclosure. If your comments responsive to this AD contain commercial or financial information that is customarily treated as private, that you actually treat as private, and that is relevant or responsive to this AD, it is important that you clearly designate the submitted comments as CBI. Please mark each page of your submission containing CBI as “PROPIN.” The FAA will treat such marked

submissions as confidential under the FOIA, and they will not be placed in the public docket of this AD. Submissions containing CBI should be sent to Stephen Elwin, Aviation Safety Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803. Any commentary that the FAA receives which is not specifically designated as CBI will be placed in the public docket for this rulemaking.

Regulatory Flexibility Act

The requirements of the Regulatory Flexibility Act (RFA) do not apply when an agency finds good cause pursuant to 5 U.S.C. 553 to adopt a rule without prior notice and comment. Because FAA has determined that it has good cause to adopt this rule without prior notice and comment, RFA analysis is not required.

Costs of Compliance

The FAA estimates that this AD affects 0 engines installed on airplanes of U.S. registry.

The FAA estimates the following costs to comply with this AD:

Estimated costs

Action	Labor Cost	Parts Cost	Cost per product	Cost on U.S. operators
Perform ECI	20 work-hours x \$85 per hour = \$1,700	\$0	\$1,700	\$0
Perform UT Inspection	7 work-hours x \$85 per hour = \$595	\$0	\$595	\$0
Perform Visual Inspection	1 work-hour x \$85 per hour = \$85	\$0	\$85	\$0
Replace fan hub blade lock assembly	25 work-hours x \$85 per hour = \$2,125	\$28,000	\$30,125	\$0

FAA estimates the following costs to do any necessary replacements that would be required based on the results of the inspection. The agency has no way of determining the number of aircraft that might need these replacements:

On-condition costs

Action	Labor Cost	Parts Cost	Cost per product
Replace engine fan hub assembly	50 work-hours x \$85 per hour =	\$790,500	\$794,750

	\$4,250		
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Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA’s authority to issue rules on aviation safety. Subtitle I, Section 106, describes the authority of the FAA Administrator. Subtitle VII, Aviation Programs, describes in more detail the scope of the Agency’s authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701, General requirements. Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

This AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

- (1) Is not a “significant regulatory action” under Executive Order 12866, and
- (2) Will not affect intrastate aviation in Alaska.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

- 1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. The FAA amends § 39.13 by:

a. Removing Airworthiness Directive 2019-18-08, Amendment 39-19735 (84 FR 49944, September 24, 2019); and

b. Adding the following new airworthiness directive:

2021-26-04 Engine Alliance: Amendment 39-21862; Docket No. FAA-2021-1069; Project Identifier AD-2021-00308-E.

(a) Effective Date

This airworthiness directive (AD) is effective [INSERT DATE 15 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

This AD replaces AD 2019-18-08, Amendment 39-19735 (84 FR 49944, September 24, 2019).

(c) Applicability

This AD applies to all Engine Alliance (EA) GP7270 and GP7277 model turbofan engines.

(d) Subject

Joint Aircraft System Component (JASC) Code 7230, Turbine Engine Compressor Section.

(e) Unsafe Condition

This AD was prompted by an uncontained failure of the engine fan hub. The FAA is issuing this AD to detect defects, damage, and cracks that could result in an uncontained failure of the engine fan hub assembly. The unsafe condition, if not addressed, could result in uncontained failure of the engine fan hub assembly, damage to the engine, and damage to the airplane.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Required Actions

(1) For EA GP7270 and GP7277 model turbofan engines with engine fan hub assembly part numbers (P/Ns) 5760221, 5760321, or 5760001, within 1,700 cycles since

new, within 150 flight cycles (FCs) after October 9, 2019 (the effective date of AD 2019-18-08), within 330 FCs since an eddy current inspection (ECI) was performed using the Accomplishment Instructions of EA Turbojet Engines Alert Service Bulletin (ASB) EAGP7-A72-389, Revision No. 6, dated November 21, 2019, or earlier versions of that ASB, or before further flight, whichever occurs later:

(i) For engine fan hub assemblies at the low-pressure compressor (LPC) module assembly level, perform an ECI of the engine fan hub blade slot bottom and blade slot front edge, and perform an ultrasonic test (UT) inspection of the fan hub rim area, using the Accomplishment Instructions, Part A – For Fan Hubs at LPC Module Assembly Level, paragraphs 1.B., 1.C., and 1.E., of EA Turbojet Engine ASB EAGP7-A72-389, Revision No. 7, dated October 8, 2021 (EAGP7-A72-389, Revision No. 7).

(ii) For engine fan hub assemblies at the piece part level, perform an ECI of the engine fan hub blade slot bottom and blade slot front edge, and perform a UT inspection of the fan hub rim area, using the Accomplishment Instructions, Part B – For Fan Hubs at Piece Part Level, paragraphs 1.B., 1.C., and 1.E., of EAGP7-A72-389, Revision No. 7.

(iii) For engine fan hub assemblies installed in an engine (on-wing or off-wing), perform an ECI of the engine fan hub blade slot bottom and blade slot front edge, and perform a UT inspection of the fan hub rim area, using the Accomplishment Instructions, Part C – For Fan Hubs Installed in an Engine, paragraphs 3.B., 3.C., and 3.E., of EAGP7-A72-389, Revision No. 7.

(2) Thereafter, at intervals not exceeding 290 FCs since the previous ECI and UT inspection, repeat the ECI of the engine fan hub blade slot bottom, ECI of the blade slot front edge, and UT inspection of the fan hub rim area required by paragraphs (g)(1)(i) through (iii) of this AD.

(3) If, during any ECI or UT inspection required by paragraphs (g)(1) through (g)(2) of this AD, a rejectable indication is found, before further flight, remove the engine fan hub assembly from service and replace with a part that is eligible for installation.

(4) For all GP7270 and GP7277 model turbofan engines, after the effective date of this AD:

(i) At the next disassembly of the engine fan hub blade lock assembly, visually inspect the fan hub fan blade lock groove area (also known as the fan hub lock ring contact area) for damage.

(ii) At the next reassembly of the engine fan hub blade lock assembly, visually inspect the following areas of the engine fan hub for damage:

(A) The fan hub scallop areas;

(B) The fan hub bore area behind the balance flange;

(C) The fan hub fan blade lock retention hooks;

(D) The fan hub rim face; and

(E) The clinch nut holes.

(iii) After any reassembly of the fan hub blade lock assembly, before further flight, perform an independent inspection for damage of the areas of the engine fan hub identified in paragraph (g)(4)(ii) of this AD.

(iv) Thereafter, repeat the inspections required by paragraphs (g)(4)(i) through (iii) of this AD at each disassembly and reassembly of the engine fan hub blade lock assembly, as applicable.

(v) As an optional terminating action to the inspection and independent inspection requirements of paragraphs (g)(4)(i) through (iv) of this AD, insert the requirements for the visual inspections and independent inspections required by paragraphs (g)(4)(i) through (iv) as Required Inspection Items in the existing approved continuous airworthiness maintenance program for the airplane.

(vi) If damage is found that exceeds serviceable limits during the inspections required by paragraphs (g)(4)(i) through (iv) of this AD, before further flight, remove the engine fan hub assembly from service and replace it with a part eligible for installation.

(5) For GP7270 and GP7277 model turbfan engines with engine serial numbers P550101 through P550706, inclusive, within 200 FCs from August 1, 2020 or before further flight, whichever occurs later, remove the engine fan hub blade lock assembly, P/N 5700451, and replace it with a part eligible for installation.

Note 1 to paragraph (g)(5): EA Turbojet Engines ASB EAGP7-A72-418, Revision No. 1, dated January 11, 2019, contains guidance on replacement of the engine fan hub blade lock assembly.

(h) Credit for Previous Actions

You may take credit for the ECI inspections required by paragraph (g)(1)(i) through (iii) of this AD if you performed the ECI inspections before the effective date of this AD using EA ASB EAGP7-A72-389, Revision No. 6, dated November 21, 2019, or an earlier version.

(i) Definitions

(1) For the purpose of this AD, a “part eligible for installation,” when referring to replacement of the engine fan hub assembly, is a part that has passed the inspections required by paragraph (g)(1) of this AD.

(2) For the purpose of this AD, a “part eligible for installation,” when referring to replacement of the engine fan hub blade lock assembly, is:

(i) A part that is not P/N 5700451, or

(ii) An engine fan hub blade lock assembly that has been modified in accordance with EA ASB EAGP7-A72-418, Revision No. 1, dated January 11, 2019, or EA ASB EAGP7-A72-418, Revision No. 0, dated December 7, 2018.

(3) For the purpose of this AD, an “independent inspection” is a second visual inspection performed by an individual qualified to perform inspections who was not involved in the original inspection of the engine fan hub assembly following disassembly and reassembly of the engine fan hub blade lock assembly.

(j) Alternative Methods of Compliance (AMOCs)

(1) The Manager, ECO Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the certification office, send it to the attention of the person identified in paragraph (k) of this AD. Information may be emailed to: ANE-AD-AMOC@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(k) Related Information

For more information about this AD, contact Stephen Elwin, Aviation Safety Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: (781) 238-7236; fax: (781) 238-7199; email: Stephen.L.Elwin@faa.gov.

(l) Material Incorporated by Reference

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(i) Engine Alliance (EA) Turbojet Engines Alert Service Bulletin EAGP7-A72-389, Revision No. 7, dated October 8, 2021.

(ii) [Reserved]

(3) For EA service information identified in this AD, contact Engine Alliance, 411 Silver Lane, East Hartford, CT, 06118; phone: (800) 565-0140; email: help24@pw.utc.com; website: www.engineallianceportal.com.

(4) You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 1200 District Avenue, Burlington, MA 01803. For information on the availability of this material at the FAA, call (817) 222-5110.

(5) You may view this service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, email: fr.inspection@nara.gov, or go to: <https://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued on December 8, 2021.

Lance T. Gant, Director,
Compliance & Airworthiness Division,
Aircraft Certification Service.

[FR Doc. 2021-27981 Filed: 12/27/2021 8:45 am; Publication Date: 12/28/2021]